

FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
RNAV (GPS) STANDARD INSTRUMENT APPROACH PROCEDURE
TITLE 14 CFR PART 97.33

Bearings, headings, courses, tracks and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated.
 Ceilings are in feet above airport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or feet RVR.

<u>AIRPORT</u> MOFFETT FEDERAL AFLD	<u>AIRPORT ID</u> KNUQ	<u>PROCEDURE NAME</u> RNAV (GPS) RWY 32R	<u>ORIGINAL/AMENDMENT</u> ORIG	<u>CITY</u> MOUNTAIN VIEW	<u>STATE</u> CA
<u>AIRPORT ELEVATION</u> 37	<u>TDZE</u> 31	<u>SUPERSEDED</u>	<u>ORIGINAL/AMENDMENT</u> NONE	<u>DATED</u>	<u>MAG VAR</u> 16E
<u>FACILITY</u> RNAV	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u>	<u>REQUIRED EFFECTIVE DATE</u> 06/20/2019	<u>CANCEL/SUSPEND</u>	<u>EPOCH YEAR</u> 1980

TERMINAL ROUTES

<u>FROM</u>	<u>FIX TYPE</u>	<u>TO</u>	<u>FIX TYPE</u>	<u>LEG TYPE</u>	<u>FO/FB</u>	<u>RNP</u>	<u>COURSE</u>	<u>DISTANCE</u>	<u>ALTITUDE</u>
ZAPEP	IAF	AGAPE		TF	FB	1.00	321.81	3.64	5200
AGAPE	IF	RIROC		TF	FB	1.00	321.81	3.51	4400
RIROC		ORZOS		TF	FB	1.00	321.78	2.52	3600
ORZOS		JULUD		TF	FB	1.00	321.77	1.88	3000
JULUD		EBIYI		TF	FB	1.00	321.76	2.87	2100
EBIYI	FAF	NUNLE/1.74 NM TO CIKGA		TF	FB	0.30	321.75	4.11	
NUNLE/1.74 NM TO CIKGA		CIKGA	MAP	TF	FB	0.30	321.75	1.74	
CIKGA	MAP	231 MSL		CA			321.75		
231 MSL		PEYIC		DF	FO	1.00			3200

MISSED APPROACH

MAP:

LPV: DA
 LNAV/VNAV: DA
 LNAV: CIKGA

MISSED APPROACH INSTRUCTIONS:

CLIMB TO 3200 DIRECT PEYIC AND HOLD.

ALTERNATE MISSED APPROACH INSTRUCTIONS:



PROFILE:

1. PT

SIDE OF COURSE

OUTBOUND

FT WITHIN

MILES OF (IAF)

2. PROFILE STARTS AT ZAPEP

3. FAC:

321.75

FAF:

EBIYI

DIST FAF TO MAP:

5.86

DIST FAF TO THLD:

6.33

4. MIN ALT: ZAPEP 5500, AGAPE 5200, RIROC 4400, ORZOS 3600, JULUD 3000, EBIYI 2100, NUNLE/1.74 NM TO CIKGA 780*

5. DIST TO THLD FROM OM:

MM:

IM:

150 HAT:

200 HAT:

0.45

GS ANT:

6. MIN GP INCPT:

2100

GP ALT AT FAF :

EBIYI 2100

OM:

MM:

IM:

7. GP ANGLE:

3.00

34:1:

IS CLEAR

20:1:

IS CLEAR

TCH:

57.1

8. MSA FROM: RW32R 5600

PBN REQUIREMENTS NOTE:

RNP APCH

NOTES:

CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW 0°C OR ABOVE 54°C.
CHART PROFILE NOTE: VGSI AND RNAV GLIDEPATH NOT COINCIDENT (VGSI ANGLE {ANGLE}/TCH {FEET}).
CHART NOTE: FOR INOPERATIVE ALS, INCREASE LNAV/VNAV ALL CATS VISIBILITY TO 1 1/8 SM AND LNAV CAT C/D VISIBILITY TO 1 3/8 SM.

ADDITIONAL FLIGHT DATA:

CHART CIRCLING ICON.
CHART VDP AT 0.84 NM TO CIKGA*
*LNAV ONLY
WAAS CHANNEL #53343
REFERENCE PATH ID: W32B
CHART FAS OBST: 242 TANK 372243N/1220137W.
CHART: 249 POLE 371818N/1215933W, 210 TOWER 372210N/1220107W.
HOLD NW, RT, 141.63 INBOUND
LTP HAE: -23.1 M

MINIMUMS:

TAKEOFF: SEE FAA FORM 8260-15A FOR THIS AIRPORT

ALTERNATE: NA ☐ STANDARD - CAT D 800-2 1/2

CATEGORY:	A			B			C			D			E		
FINAL TYPE	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA
LPV DA	231	1/2	200	231	1/2	200	231	1/2	200	231	1/2	200			
LNAV/VNAV DA	442	3/4	411	442	3/4	411	442	3/4	411	442	3/4	411			
LNAV MDA	500	1/2	469	500	1/2	469	500	1	469	500	1	469			
CIRCLING	540	1	503	600	1	563	620	1 1/2	583	780	2 1/2	743			

CHANGES - REASONS

ORIGINAL PROCEDURE.



COORDINATED WITH:

A4A ☐ ALPA ☒ AOPA ☒ APA ☐ HAI ☐ NBAA ☒ OTHER: APRT MGR, ZOA, NORCAL APP CON, NUQ ATCT

FLIGHT CHECKED BY

PENDING

OFFICE

DATE

DEVELOPED BY

MIKE MELSSEN

Digitally signed by

MIKE MELSSEN

Mar 25, 2019

OFFICE

AJV-A432

DATE

02/22/2019

APPROVED BY

PATRICK MULQUEEN

Digitally signed by

WARDELL HENNING

Mar 29, 2019

OFFICE

AJV-A430

DATE

TITLE

MANAGER



FAS DATA BLOCK INFORMATION

<u>DATA FIELD</u>	<u>DATA</u>
OPERATION TYPE	0
SBAS SERVICE PROVIDER IDENTIFIER	0
AIRPORT IDENTIFIER	KNUQ
RUNWAY	RW32R
APPROACH PERFORMANCE DESIGNATOR	0
ROUTE INDICATOR	
REFERENCE PATH DATA SELECTOR	0
REFERENCE PATH IDENTIFIER (APPROACH ID)	W32B
LTP/FTP LATITUDE	372421.7355N
LTP/FTP LONGITUDE	1220234.2610W
LTP/FTP ELLIPSOIDAL HEIGHT	-00231
FPAP LATITUDE	372544.1280N
FPAP LONGITUDE	1220316.5950W
THRESHOLD CROSSING HEIGHT (TCH)	00057.1
TCH UNITS SELECTOR (METERS OR FEET USED)	F
GLIDEPATH ANGLE (GPA)	03.00
COURSE WIDTH AT THRESHOLD	106.75
LENGTH OFFSET	0008
HORIZONTAL ALERT LIMIT (HAL)	40.0
VERTICAL ALERT LIMIT (VAL)	35.0
CRC REMAINDER	28006D34

ADDITIONAL PATH POINT RECORD INFORMATION

ICAO CODE	K2
LTP ORTHOMETRIC HEIGHT	+00095
FPAP ORTHOMETRIC HEIGHT	+00095



FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
STANDARD INSTRUMENT APPROACH PROCEDURE DATA RECORD

<u>AIRPORT</u> MOFFETT FEDERAL AFLD	<u>AIRPORT ID</u> KNUQ	<u>PROCEDURE NAME</u> RNAV (GPS) RWY 32R	<u>AMDT NO.</u> ORIG	<u>CITY</u> MOUNTAIN VIEW	<u>STATE</u> CA	<u>AIRPORT ELEVATION</u> 37	<u>FACILITY</u> RNAV
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PART A: OBSTRUCTION DATA SEGMENTS

INITIAL

FROM TO
ZAPEP AGAPE

<u>RNP</u>	<u>DISTANCE</u> 3.64	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>		<u>HMAS</u>						
<u>OBSTRUCTION</u>	<u>COORDINATES</u>		<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
1.AAO	370630.00N/1215045.00W		3816	164	98	4E	1000				PR107 AT277	5200
2.TERRAIN	370630.00N/1215045.00W		3616 (3600)								AS1500	5100

COMPUTATIONS

ALT KIAS KTAS HAA VKTW TR BA DTA COURSE CHANGE DVEB VEB OCS RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

INTERMEDIATE

FROM TO
AGAPE RIROC

<u>RNP</u>	<u>DISTANCE</u> 3.51	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>				
<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
3.AAO	370948.95N/1215507.80W	3680	50	20	2C	500				PR86	4300
4.TERRAIN	370921.00N/1215354.00W	3428 (3400)								AS1000	4400

COMPUTATIONS

ALT KIAS KTAS HAA VKTW TR BA DTA COURSE CHANGE DVEB VEB OCS RF CENTER FIX/DISTANCE

SEGMENT REMARKS:



INTERMEDIATE: STEPDOWN

FROM

RIROC

TO

ORZOS

<u>RNP</u>	<u>DISTANCE</u> 2.52	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>					
<u>OBSTRUCTION</u>	<u>COORDINATES</u>		<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
5.AAO	371118.08N/1215531.99W		3000	50	20	2C	500				PR86	3600
6.TERRAIN	371148.00N/1215603.00W		2516 (2500)								AS1000	3500

<u>COMPUTATIONS</u>	<u>ALT</u>	<u>KIAS</u>	<u>KTAS</u>	<u>HAA</u>	<u>VKTW</u>	<u>TR</u>	<u>BA</u>	<u>DTA</u>	<u>COURSE CHANGE</u>	<u>DVEB</u>	<u>VEB OCS</u>	<u>RF CENTER FIX/DISTANCE</u>
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SEGMENT REMARKS:

INTERMEDIATE: STEPDOWN

FROM

ORZOS

TO

JULUD

<u>RNP</u>	<u>DISTANCE</u> 1.88	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>					
<u>OBSTRUCTION</u>	<u>COORDINATES</u>		<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
7.AAO	371315.00N/1220054.00W		2103	164	98	4E	500				PR86 AC98 SA-486 AT699	3000
8.TERRAIN	371324.00N/1215939.00W		751 (800)								AS1000	1800

<u>COMPUTATIONS</u>	<u>ALT</u>	<u>KIAS</u>	<u>KTAS</u>	<u>HAA</u>	<u>VKTW</u>	<u>TR</u>	<u>BA</u>	<u>DTA</u>	<u>COURSE CHANGE</u>	<u>DVEB</u>	<u>VEB OCS</u>	<u>RF CENTER FIX/DISTANCE</u>
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SEGMENT REMARKS:



INTERMEDIATE: STEPDOWN

FROM

JULUD

TO

EBIYI

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>					
	2.87											
<u>OBSTRUCTION</u>	<u>COORDINATES</u>		<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
9.AAO	371348.00N/1220112.00W		1405	164	98	4E	500				AC98 PR86 SA-493 AT504	2100
10.TERRAIN	371515.00N/1220036.00W		426 (400)								AS1000	1400

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

FINAL: LPV

FROM

EBIYI

TO

CIKGA

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>					
	5.86		DA	200								
<u>OBSTRUCTION</u>	<u>COORDINATES</u>		<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
								ASC				231

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:



FINAL: LNAV/VNAV

FROM

EBIYI

TO

CIKGA

RNP	DISTANCE	PAT	MAP	HAT			HMAS					
	5.86		DA		411							
OBSTRUCTION	COORDINATES		ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
11.TREE (06-055860)	372327.41N/1220213.37W		171	20	3	1A		21.90:1				442

COMPUTATIONS	ALT	KIAS	KTAS	HAA	VKTW	TR	BA	DTA	COURSE CHANGE	DVEB	VEB OCS	RF CENTER FIX/DISTANCE
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SEGMENT REMARKS:

FINAL: LNAV

FROM

EBIYI

TO

NUNLE/1.74 NM TO CIKGA

RNP	DISTANCE	PAT	MAP	HAT			HMAS					
	4.11											
OBSTRUCTION	COORDINATES		ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
12.AAO	371858.92N/1220044.89W		410	50	20	2C	250				SA-7 DG127	780

COMPUTATIONS	ALT	KIAS	KTAS	HAA	VKTW	TR	BA	DTA	COURSE CHANGE	DVEB	VEB OCS	RF CENTER FIX/DISTANCE
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SEGMENT REMARKS:



FINAL: LNAV STEPDOWN

FROM

NUNLE/1.74 NM TO CIKGA

TO

CIKGA

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>				
	1.74		CIKGA			469					
<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
13.TANK (06-025995)	372242.70N/1220136.73W	242	20	3	1A	250					500

COMPUTATIONS	ALT	KIAS	KTAS	HAA	VKTW	TR	BA	DTA	COURSE CHANGE	DVEB	VEB OCS	RF CENTER FIX/DISTANCE
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SEGMENT REMARKS:

MISSED APPROACH : LPV

FROM

DA

TO

PEYIC

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u> 62				
<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
							ASC				3200
14.AAO	373228.70N/1220457.00W	480	50	20	2C	1000					1500
15.TERRAIN	373418.00N/1220618.00W	249 (200)								AS1500	1700

COMPUTATIONS	ALT	KIAS	KTAS	HAA	VKTW	TR	BA	DTA	COURSE CHANGE	DVEB	VEB OCS	RF CENTER FIX/DISTANCE
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SEGMENT REMARKS:



COMMUNICATIONS WITH
ZOA ARTCC, NORCAL APP CON, NUQ TOWER

WX REMARKS:

<u>GLIDESLOPE ANGLE</u>	<u>ELEV RWY THRESHOLD</u>	<u>TCH</u>	<u>ELEV GS ANTENNA</u>	<u>DISTANCE FROM RWY</u>	<u>VGSI ANGLE</u>	<u>TCH</u>
3.00	31.3	57.1			3.00	52.7

RUNWAY THRESHOLD	X	FT FROM THRESHOLD	DISPLACED THRESHOLD DISTANCE	191
ON CENTERLINE	X	FT FROM CENTERLINE		

<u>CRITICAL LOW</u>	<u>CRITICAL HIGH</u>	<u>ACT</u>	<u>APT ISA</u>
0C	+54C	0C	+14.9275C

AVERAGE COLD TEMPERATURE DERIVED FROM 5-YEAR HISTORY (2013-2017).
CRITICAL LOW TEMPERATURE BASED ON ACT.
DESCENT RATE (FPM): STANDARD TEMP 956 HIGH TEMP 1260.

<u>AIRPORT</u>	<u>AIRPORT ID</u>	<u>PROCEDURE NAME</u>	<u>AMDT NO.</u>	<u>CITY</u>	<u>STATE</u>	<u>AIRPORT ELEVATION</u>	<u>FACILITY</u>
MOFFETT FEDERAL AFLD	KNUQ	RNAV (GPS) RWY 32R	ORIG	MOUNTAIN VIEW	CA	37	RNAV
<u>"VISUAL PORTION OF FINAL" PENETRATIONS</u>							
Final Type	LPV, LNAV/VNAV, LNAV						
34:1							
98 TREE (06-056281) 372407.81N/1220237.46W (23.66)				99 TREE (06-056077) 372405.72N/1220238.82W (20.13)			
92 TREE (06-056278) 372407.87N/1220238.16W (18.46)				76 TREE (06-055989) 372410.31N/1220240.83W (11.58)			
115 TREE (06-055457) 372357.40N/1220235.35W (10.11)				92 TREE (06-055976) 372404.07N/1220238.75W (8.53)			
137 TREE (06-057168) 372348.37N/1220233.78W (5.84)				86 TREE (06-055977) 372405.30N/1220234.89W (2.44)			

HELICOPTER 'VISUAL PORTION OF FINAL' PENETRATIONS

and/or
5280-FT "PROCEED VFR" SEGMENT LEVEL SURFACE AREA PENETRATIONS

PART C: GENERAL REMARKS:

OBSTACLES 06-025945 - 34 FT MSL POLE AT 372419.38N/1220234.73W, AC 1A, AND 06-055536 - 34 MSL TERRAIN AT 372418.40N/1220237.07W, AC 1A ARE FIXED-BY-FUNCTION SO THE LPV MINIMUMS CAN PROVIDE A 200 FT HAT. THE TERRAIN LOCATION IS THE CENTER OF A TAXIWAY AND THE POLE IS A REIL.

ORDER 8260.3 CHAPTER 2 APPLIED TO 249 POLE (06-151219) 371818.08N/1215933.34W.
ORDER 8260.3 CHAPTER 2 APPLIED TO 210 TOWER (06-153832) 372210.37N/1220106.88W.

ORDER 8260.3, VOLUME 1, CHAPTER 2, NEW CIRCLING CRITERIA APPLIED.



FACILITY
RNAV

TITLE
AERONAUTICAL INFORMATION SPECIALIST